

*Te-ar* Resultatives in Japanese:  
A Non-lexical Approach in HPSG  
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Abstract

This paper examines the structure of *te-ar* resultatives in Japanese in the framework of the Head-driven Phrase Structure Grammar (HPSG) as laid out in [1, 2] by referring to the data of honorification to argue that *te-ar* has a biclausal structure and that the resultative predicate *aru* is a raising verb. *Te-ar* construction involves a complex predicate consisting of a gerundive verb and the resultative auxiliary verb *aru*. Complex predicates have always stimulated the controversy over whether they are to be derived lexically or non-lexically, and correspondingly, whether they are to be analyzed as monoclausal or biclausal. One type of the *te-ar* resultative allegedly presents problems for this dichotomy because it presents data which favor a lexical analysis and those which support a non-lexical analysis at the same time. A recent study in LFG attempts to solve this problem by having recourse to an operation at a pre-syntactic level ([3]), and yet it leaves certain crucial problems unsolved. In this paper I investigate into the honorification operation and demonstrate that *te-ar* resultatives do not in fact support a lexical analysis. The data of honorification are further explored to show that the resultative auxiliary *aru* is a raising verb rather than an equi-type control verb. Given this proposal, the very puzzling behaviors of *te-ar* resultatives find a straightforward unified account.

## 1 Introduction

This paper examines the structure of *te-ar* resultatives in Japanese in the framework of the Head-driven Phrase Structure Grammar (HPSG) by referring to the data of honorification to argue that *te-ar* has a biclausal structure and that the resultative predicate *aru* is a raising verb. My discussion proceeds in the following way. I will first present the data of *te-ar* resultatives, and show how this construction has been treated in other studies. After discussing problems in previous studies, I will present my proposal and supporting arguments.

## 2 *Te-ar* Resultatives

The *te-ar* resultative is a complex predicate construction composed of a gerundive verb (suffixed with *te*) followed by the aspectual auxiliary verb *aru*, which is homonymous with the lexical verb meaning '(for something inanimate) to exist.' The *te-ar* sequence produces two types of resultative construction. (1)-(2) give the examples:

- (1) Kyoko -ga tegami -wo kaita.  
      nom letter acc write  
      'Kyoko wrote a letter.'

- (2) a. Kyoko -ga tegami -wo kaite-aru.  
           nom letter acc write-RES  
       ‘Kyoko is in the state of having written a letter.’  
   b. Tegami -ga kaite-aru.  
           nom write-RES  
       ‘(lit.) A letter is in the state of having been written.’
- (3) Tegami -ga kak-areta.  
           nom write-PASS  
       ‘A letter was written.’

The first sentence (1) is an ordinary sentence with the verb *kak* ‘to write.’<sup>1</sup> We can obtain two kinds of resultatives (2a) and (2b). (2a) simply adds the aspectual morpheme *aru* to the gerundive form of *kak* without causing any apparent syntactic change to (1).<sup>2</sup> On the other hand, (2b) drops out the logical subject (*Kyoko*) of the verb *kak* and changes the case marker on the logical object (*tegami* ‘letter’) from the accusative to the nominative case, much in a similar way as the passive, which is given in (3). In other words, this type apparently has undergone the process of intransitivization. For this reason, I will refer to the first type as the plain resultative, and the latter as the intransitivized resultative. It is part of my purpose to explore the possibility of a unified analysis covering both types of the resultative.<sup>3</sup>

### 3 Previous analyses: lexical and non-lexical approaches

Complex predicates have always aroused disputes over whether they should be analyzed lexically or non-lexically. Lexical approaches treat the verb complex of the lower and the higher predicate as a single lexical unit for purposes of syntax and assumes a monoclausal structure. Non-lexical approaches take the verbal complex as consisting of two separate lexical verbs simply appearing adjacent to each other on the surface and assumes a biclausal structure, in which the higher predicate is the matrix verb subcategorized for a VP complement headed by the lower predicate.

In view of this, the intransitivized *te-aru* resultative displays paradoxical properties (cf. [3]). Namely, it apparently involves grammatical function changing similar to that of passivization (favoring lexical approaches), while the verbal sequence (gerundive verb + *aru*) is not a lexical unit (favoring non-lexical approaches).

To reconcile the incongruent properties, A recent study in LFG ([3]) proposes an argument-sharing approach in the framework of LFG. Simply put, *te-aru* constructions involve two predicates at the level of argument structure, as illustrated in (4):

- (4)    *aru*    < theme,       *kaite*    < agent, patient > >  
                                   |  
                                   \_\_\_\_\_

The association line here establishes the argument sharing between the theme argument of *aru* and the patient argument of *kaite*. After the sharing, the complex predicate of V-ger+*aru* (*kaite-aru*) as a whole functions as one predicate for the purpose of mapping onto grammatical functions at f-structure.

So the argument-sharing approach seems successful to some extent, but it has some problems. First and foremost, this analysis does not really support

the *syntactic* independence of the gerundive verb and *aru* because they are mapped onto f-structure as a single unit after all. So if there is a syntactic process (which ought to take place at f-structure) which refers to the gerundive verb and *aru* separately, then the above analysis will need to be revised if not discarded.

Honorification gives data indicating such a process. The data of honorification, in addition, suggest that the intransitivized resultative does not actually involve grammatical function change; therefore, the lexical approach is not necessarily motivated.

#### 4 Honorification

##### 4.1 Basic data of honorification

It is fairly well established that honorification is a type of agreement (cf. [2, 4, 5, 6]). The selection of the trigger depends on the SUBCAT list of the predicate on which the honorific morphology is realized. (5) gives the basic data of SH, and (6) those of OH:

- (5) a. Sensei -ga hon -wo o-yomi-ninatta.  
 teacher nom book acc o-read-SH  
 'The teacher (honored) read a book.'
- b. Sensei -ga hon -wo Kyoko -ni o-okuri-ninatta.  
 teacher nom book acc dat o-send-SH  
 'The teacher (honored) sent Kyoko a book.'
- (6) a. Kyoko -ga sensei -wo o-tasuke-sita.  
 nom teacher acc o-help-OH  
 'Kyoko helped the teacher (honored).'
- b. Kyoko -ga hon -wo sensei -ni o-okuri-sita.  
 nom book acc teacher dat o-send-OH  
 'Kyoko sent the teacher (honored) a book.'

When the subject is worthy of respect, the verb is prefixed with *o* and is followed by the SH morpheme *ninar* (*ninatta* is the past tense form). So *yom* becomes *o-yomi-ninar* (with minor morphological adjustments) and *okur* becomes *o-okuri-ninar*, as illustrated in (5) above.

OH, which is exemplified in (6), is similar to SH except that the trigger is a grammatical object and the OH morpheme is the light verb *s(u)* conjugated as *sita* in past tense.

##### 4.2 Honorification of resultatives: data

(7) and (8) give the data of the honorification involving the intransitivized resultatives.<sup>4</sup> As (7) shows, SH is extremely marginal, though [3] suggests that the nominative NP can trigger SH (of a little different form):<sup>5</sup>

- (7) \*a. Sensei -ga o-maneki-ninatte-aru.  
 teacher nom o-invite-SH-RES  
 \*b. Sensei -ga maneite-o-ari-ninaru.  
 teacher nom invite-o-RES-SH  
 'The teacher (honored) is in the state of having been invited.'

On the other hand, the nominative NP can trigger OH as in (8):

- (8) Sensei -ga o-maneki-site-aru.  
 teacher nom *o*-invite-OH-RES  
 'The teacher (honored) is in the state of having been invited.'

This situation has several important implications. First, it shows that the nominative NP is not a syntactic subject but an object, counter to [3], entailing that it does not involve grammatical function change. Second, it means that this is an instance of "subjectless" sentences, where the sole argument of a predicate is an object. Third, consequently, this casts doubt on the standard HPSG approach to grammatical functions, which are defined only in terms of relative obliqueness (cf. [1, 2]). Incidentally, the nominative NP of the direct passive only allows SH and not OH, in marked contrast to the intransitivized resultative. Examples are given in (9):

- (9) a. Sensei -ga manek-areta.  
 teacher nom invite-PASS  
 b. Sensei -ga o-manek-are-ninatta.  
 teacher nom *o*-invite-PASS-SH  
 \*c. Sensei -ga o-manek-are-sita.  
 teacher nom *o*-invite-PASS-OH  
 \*d. Sensei -ga o-maneki-s-areta.  
 teacher nom *o*-invite-OH-PASS  
 'The teacher (honored) is in the state of being invited.'

This contrast with the passive further argues that intransitivization does not incur grammatical function change.

For the sake of completeness, (10) and (11) give data of honorification of the plain resultative. Unsurprisingly, the plain resultative does not affect the grammatical functions of the arguments. The nominative NP only triggers SH (10a), and the accusative NP only triggers OH (11d):

- (10) a. Sensei -ga Kyoko -wo maneite-o-ari-ninaru (rasii). (SH)  
 teacher nom acc invite-*o*-RES-SH  
 ?b. Sensei -ga Kyoko -wo o-maneki-ninatte-aru (rasii). (SH)  
 teacher nom acc *o*-invite-SH-RES  
 \*c. Sensei -ga Kyoko -wo maneite-o-ari-suru (rasii). (OH)  
 teacher nom acc invite-*o*-RES-OH  
 \*b. Sensei -ga Kyoko -wo o-maneki-site-aru (rasii). (OH)  
 teacher nom acc *o*-invite-OH-RES  
 'The teacher (honored) is in the state of having invited Kyoko.'

- (11) \*a. Kyoko -ga sensei -wo maneite-o-ari-ninaru (rasii). (SH)  
 nom teacher acc invite-*o*-RES-SH  
 \*b. Kyoko -ga sensei -wo o-maneki-ninatte-aru (rasii). (SH)  
 nom teacher acc *o*-invite-SH-RES  
 \*c. Kyoko -ga sensei -wo maneite-o-ari-suru (rasii). (OH)  
 nom teacher acc invite-*o*-RES-OH  
 d. Kyoko -ga sensei -wo o-maneki-site-aru (rasii). (OH)  
 nom teacher acc *o*-invite-OH-RES  
 'Kyoko is in the state of having invited the teacher (honored).'

## 4.3 Morphological structures of honorification

A careful reader must have noticed that there is more than one possible order of the morphemes in the case of the honorification involved in the complex predicate constructions.

In my 1992 dissertation, I demonstrated that the morphological order reflects the syntactic structure of complex predicates (cf. [6]). As I extensively argued there, the generalization is this: the honorific morphemes (*ninar* for SH and *s(u)* for OH) appear immediately after the predicate which subcategorizes for the trigger NP. The honorific prefix *o*, on the other hand, is prefixed to the smallest lexically independent unit with such a predicate, and exactly one lexically independent unit can come between the honorific *o* and the honorific morpheme *ninar/s(u)*.

The point is that *aru* of the resultative has a corresponding homonymous lexical verb, as I said, and for this reason it is considered a lexically independent morpheme.

(12) again gives the data of the OH of the intransitivized resultative. There are three combinations of the morphemes:

- (12) a. Sensei -ga *o-maneki-site-aru*.  
           teacher nom *o-invite-OH-RES*  
       \*b. Sensei -ga *maneite-o-ari-suru*.  
           teacher nom *invite-o-RES-OH*  
       \*c. Sensei -ga *o-maneite-ari-suru*  
           teacher nom *o-invite-RES-OH*  
           'The teacher (honored) is in the state of having been invited.'

(12a) has the lower predicate *manek* 'invite' appearing between the honorific *o* and *site*; (12b) has the higher resultative predicate *aru* between *o* and *suru*; (12c) has the whole complex *maneite+aru* between *o* and *suru*.<sup>6</sup> Among these, (12c) is not morphologically possible; because the higher predicate *aru* is a lexically independent unit, and so two lexically independent morphemes (*manek* and *aru*) are put between the honorific *o* and *suru*, counter to the generalization given above. If the trigger of the OH is the object argument of the lower predicate, the result will be the form in (12a); if it is the object argument of the higher predicate, the result will be (12b); if it is the object argument of the whole complex, *maneite+aru*, the result will also be (12b), because *suru* ought to appear after the whole complex. And as indicated by the asterisks, only the form in (12a) turns out to be possible.

The implication is very clear. Putting aside the issue of the grammatical function for a moment, this situation reveals one important fact: that the lower predicate (V-ger) is a lexical verb with its own SUBCAT frame. If the sequence of *manek* and *aru* were a single unit for the purpose of syntactic mapping at f-structure, as [3] claims, then we would have obtained the form in (12b), and this provides a strong piece of evidence for the non-lexical, biclausal approach to the resultative complex predicate construction.

The plain resultative, illustrated in (13)-(14), does not have much worth talking about. The crucial things are that the nominative NP triggers only SH, and that it also demonstrates the syntactic independence of the lower predicate. When an accusative NP is to trigger OH, the honorific predicate *site* appears after the gerundive verb and before the resultative *aru* as in (14b), indicating that the gerundive verb independently subcategorizes for this argument as its object:

- (13) a. Sensei -ga Kyoko -wo maneite-*o*-ari-*ninaru* (rasii). (SH)  
           teacher nom                   acc invite-*o*-RES-SH  
       ?b. Sensei -ga Kyoko -wo *o*-maneki-*ninatte*-aru (rasii). (SH)  
           teacher nom                   acc *o*-invite-SH-RES  
           'The teacher (honored) is in the state of having invited Kyoko.'

- (14) \*a. Kyoko -ga sensei -wo maneite-*o*-ari-*suru* (rasii). (OH)  
           nom teacher acc invite-*o*-RES-OH  
       b. Kyoko -ga sensei -wo *o*-maneki-*site*-aru (rasii). (OH)  
           nom teacher acc *o*-invite-OH-RES  
           'Kyoko is in the state of having invited the teacher (honored).'

So, the behaviors of the two types of the resultative with respect to honorification are contrastive in that the nominative NP triggers SH in the plain resultative, and OH in the intransitivized resultative. Nevertheless, the morphological order shows that they both are syntactically biclausal.

## 5 Proposal

### 5.1 A unified biclausal structure of the resultatives

In the preceding sections I have demonstrated through the data of honorification that (1) the resultative formation does not involve grammatical function change, and, therefore, a lexical approach is not necessarily motivated, and (2) the resultative construction is syntactically biclausal, with *V-ger* and *aru* separately heading each of the clauses. Now, a typical biclausal analysis of, say, the causative, posits an equi-type control structure. By analogy, if the intransitivized resultative has a biclausal structure, one might assume that the nominative NP, which is the only argument of the higher resultative predicate, is to control the logical object of the lower predicate (*V-ger*). Of course, this is counter to the typological characterization of control relations because the controllee is generally limited to the least oblique argument or the thematically highest argument (cf. [2, 7]). But there are at least two ways to bring about this effect, which are in fact mentioned in [3]:<sup>7</sup> (1) by setting up a special rule to allow this rather exceptional control relation or (2) by first intransitivizing the lower predicate to make the object argument the least oblique argument, and then allowing the usual "subject" control principle to take care of the rest. The first option is very problematic because allowing the possibility of this type of control relation has a far-reaching effect, which would make the theory less constrained and too powerful. So I will take the second option.

As the intransitivization process leaves out the subject argument, the nominative argument controls the least oblique of the remaining arguments, which *was* the direct object. Once the intransitivization operation is separated from the resultative formation, the resultative structure is of a normal type of "subject" control structure for both types, and we need only one resultative predicate *aru* for both types. All we need to do in addition is state that the subcategorized VP is underspecified in terms of the feature [ $\pm$ intransitivized]. Then the rest will be taken care of by general grammar rules and principles. (15) gives the feature structure of the resultative *aru*: as an equi-type control verb:

(15) *aru* (preliminary: control verb)

[	SYNSEM   LOC	[	CAT   S-CAT <NP[1], VP[ger; ±intr; S-CAT <NP[2]⟩]:[3]>		]
			CONT [		
			Relation	<i>result</i>	
			theme	[1] [index [2]]	
			soa-arg	[3]	

## 5.2 Raising analysis

I have been suggesting, partly following [3], that the resultatives involve “subject” control structures; however, this has some problems, even if we rename it as the “least oblique argument” control. Because changing the term does not explain why the argument of *aru* (NP[1] in (15)) displays the distinctive properties of an object in the intransitivized resultative while the same argument displays the properties of a subject in the plain resultative.

Furthermore, according to the HPSG control theory [2, 7], which draws on the semantic class of verbs and the semantic role of the participants, the subject control is reserved for commitment-type verbs (e.g., *promise*, *try*, *intend*) and orientation-type verbs (e.g., *want*, *need*, *expect*). The controller is specified as the committor participant/ experiencer participant. Obviously the resultative verb *aru* and the nominative controller NP particularly of the intransitivized resultative do not fit either of these characterizations.

To solve these problems, I propose two things. First, grammatical function is a primitive feature specified for an argument of a predicate. In (16) is the revised version of the intransitivizing lexical rule:

(16) Intransitivization lexical rule (revised)

if	[	SYNSEM   LOC   CAT	[	HEAD verb[-intrans]		]
				SUBCAT⟨[1]NP[sbj], [2]NP[obj], . . . ⟩		
is a lexical entry, then so is						

$$\left[ \text{SYNSEM} \mid \text{LOC} \mid \text{CAT} \left[ \begin{array}{l} \text{HEAD} \text{ verb}[\text{+intrans}] \\ \text{SUBCAT} \langle [2]\text{NP}[\text{obj}], \dots \rangle \end{array} \right] \right]$$

Second, the resultatives do not involve control structure but raising structure. The data of honorification (12a) has shown that the nominative NP of the intransitivized resultative is an object of the lower predicate. In the case of the plain resultative, the nominative NP is the subject argument of the lower predicate as well as of the higher resultative predicate. What these situations suggest is that the grammatical function of the nominative NP is specified in the SUBCAT list of the lower predicate. The higher predicate *aru* does not specify the grammatical function of its NP argument, but percolates it from the argument of its VP complement. Now, this is precisely the defining property of a raising verb. Namely, in the case of raising verbs, the entire SYNSEM value of the unexpressed subject of the unsaturated VP complement (= [2]) is structure-shared with that of another NP argument of the raising verb (cf. [2]).<sup>8</sup>

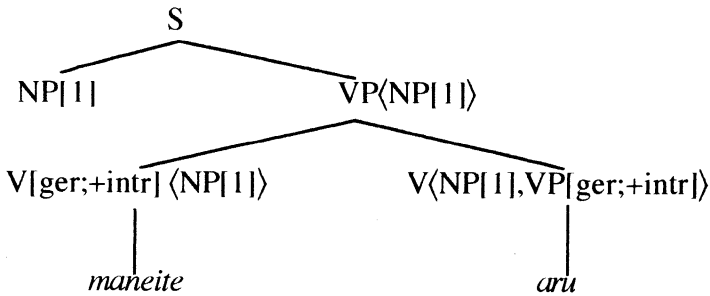
(17) shows the feature structure of the resultative predicate *aru* as a raising verb that I propose:

(17) *aru* (revised: raising verb)

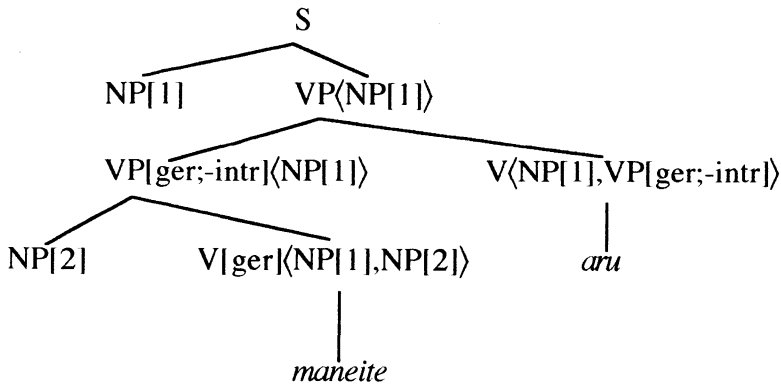
$$\left[ \text{SYNSEM} \mid \text{LOC} \left[ \text{CAT} \mid \text{S-CAT} \langle [2]\text{NP}, \text{VP}[\text{ger}; \pm \text{intr}; \text{S-CAT} \langle [2] \rangle]: [1] \rangle \right. \right. \\ \left. \left. \text{CONT} \left[ \begin{array}{ll} \text{Relation} & \text{result} \\ \text{soa-arg} & [1] \end{array} \right] \right] \right]$$

The diagrams in (18) represents the schematic structures of the two types of the resultative incorporating this proposal:

(18) a. intransitivized resultative (raising)



b. plain resultative (raising)



The raising analysis seems sensible from semantic considerations as well. The predicate need not be either of commitment type or of orientation type, and the NP argument of the raising predicate need not be a commitor participant or an experiencer participant. The NP argument, in fact, does not have a corresponding semantic role of its own. (see the feature structure (17)). This better suits the semantics of the resultative; it gives an aspectually modified description of an event itself.



## 6 Conclusion

I have claimed that the two types of the *te-arū* resultative, plain and intransitivized, have essentially the same biclausal structure in which the resultative auxiliary *aru* is a raising verb subcategorized for an NP and an unsaturated VP. The NP structure-shares with the unexpressed argument of the unsaturated VP. The difference between the two types is due to the different value of the feature [intransitivized] specified on the unsaturated VP complement of *aru*. The auxiliary *aru* with the positive value is subcategorized for the VP whose head has undergone the lexical process of intransitivization, thus constituting an intransitivized resultative sentence. The process of intransitivization leaves out the least oblique argument from the SUBCAT feature, without changing the grammatical function feature of the remaining arguments. Grammatical functions are a primitive notion, specified in the SUBCAT list of a lexical verb.

Owing to the nature of the raising verb, the NP argument of *aru* does not have its own SYNSEM features including the grammatical function feature or the case feature; the NP argument structure-shares the SYNSEM features with the unexpressed argument of the VP complement as specified by its head. This raising verb analysis readily explains why the nominative NP of the intransitivized resultative displays the property of a syntactic object, while that of the plain resultative shows the behavior of syntactic subject.

## Notes

1 Henceforth, the “original sentence” refers to a sentence headed by a verb without an auxiliary or an affixational morpheme. This term is used for the sake of convenience, and does not assume a syntactic process of derivation for a complex predicate.

2 The sentences of the type (2a) often do not sound perfect. Some native speakers of Japanese reject them across the board. The acceptability seems to improve a little if the nominative case *ga* is replaced by the topic marker *wa* and a certain aspectual adverb (such as *mou* ‘already’) is added. In many cases the sentence sounds better if the nominative NP (*Kyoko* in (2a)) is suppressed altogether. The elucidation of these factors, either semantic or syntactic, contributing to the acceptability of the *te-arū* resultative awaits an independent study.

3 For the sake of convenience alone, in this paper I use the terms *lower predicate* and *higher predicate* for a complex predicate structure without necessarily assuming syntactic embedding. *Lower predicate* refers to the lexical verb of root form or of gerundive form, while *higher predicate* refers to the predicate which modifies the lower predicate aspectually or in some other way. So with the resultative, *lower predicate* is the gerundive verb, and *higher predicate* the resultative auxiliary *aru*.

4 Complex predicates usually allow for more than one possible morphological structure for honorification; this issue will be shortly discussed.

5 One must note that not all verbs allow honorification. There seems to be an intricate system of semantic conditions for honorification, which has yet to be explored. For instance, the semantic strategy involved in OH is to pay respect to the object by humbling the action of the subject. So, OH is possible only with verbs that denote an action that can be humbly done. That is, *invite* and *help* are among the OH-able verbs, while *criticize*, *kick*, and *kill* are not.

6 *maneite* is the gerundive form of *manek*.

7 Both of the structures are rejected in [3]. The first structure is rejected because, as I argue here, this type of control is unattested elsewhere, and that, according to [3], the logical subject of the gerundive verb does not function as a subject. As for the second structure, there is no independent reason to assume the passive (intransitivized) use of an (active) gerund and a unified analysis could not be achieved. The latter is so because, [3] claims, the resultative *aru* would then have to subcategorize for the passive gerund for one type of the resultative and the active one for the other. I agree with [3] in that the operation of intransitivization runs the risk of overgeneration, unless adequately constrained. I, however, believe that a unified analysis can be achieved by means of employing the underspecified feature ([ $\pm$ intransitivized]) in the feature structure of *aru*, which will be elaborated by the gerund it attaches to.

8 [2] mentions another important difference that the NP complement of equi verbs is of the sort *ref*, while raising verbs have no such restriction. This property, however, is not relevant to Japanese, which does not allow for a dummy NP corresponding to *it* and *there* in English.

## References

- [1] Pollard, C. & Sag, I.A. (1987). *Information-Based Theory of Syntax and Semantics*. Vol. 1. Stanford: CSLI.
- [2] Pollard, C. & Sag, I.A. (1994). *Head-Driven Phrase Structure Grammar*. Chicago: The University of Chicago Press and Stanford: CSLI.
- [3] Matsumoto, Y. (1990). On the syntax of Japanese "intransitivizing" *-te aru* construction: non-lexical function changing. *Proceedings from the 26th Regional Meeting of the Chicago Linguistic Society*, 277-291.
- [4] Harada, S.I. (1976). Honorifics. In Shibatani, M. (ed.) *Syntax and Semantics*. Vol. 5, *Japanese Generative Grammar*. New York: Academic Press.
- [5] Fukushima, K. (1993). SUBCAT, CONTENT, CONTEXT, and honorification in Japanese. Ms. (paper presented at HPSG Miniconference, July 24-25, 1993, Ohio State University.)
- [6] Uda, C. (1994). *Complex Predicates in Japanese*. New York: Garland Publishing.
- [7] Sag, I.A. & Pollard, C. (1991). An integrated theory of complement control. *Language* 67: 63-113.